

Daniel Lim

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RESEARCH FIELDS	Data-driven mechanical design and manufacturing <i>Machine learning-based design, 3D-printing, Finite element analysis</i>	
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EDUCATION	Ph.D. in Mechanical Engineering Advisor: Prof. Grace X. Gu University of California, Berkeley	2024. 08
	M.S in Mechanical Engineering Advisor: Prof. Alice M. Agogino University of California, Berkeley	2018
	M.Eng in Mechanical Engineering Advisor: Prof. Alice M. Agogino University of California, Berkeley	2015
	B.S in Mechanical Engineering Korea University, Seoul, Republic of Korea	2014

WORK EXPERIENCE	<i>R&D engineer</i> Multiscale Transfer Lab Korea University, Seoul, Republic of Korea	2020 – 2021
	<i>Mechanical Design Engineer</i> The Wave Talk. Inc, Seoul, Republic of Korea	2018 – 2019

HONORS & AWARDS	[10] BioEnginuity fellowship [9] International Design Award (IDA) silver [8] Platinum A' Design award, Italy [7] H2H8 Fellowship [6] Machine learning driven service using non-verbal sound award, Korea [5] Artificial Intelligence driven vehicle exterior service award, Korea [4] Outstanding GSI Award, Berkeley, USA [3] CITRIS Tech for social goods, Berkeley, USA [2] Korea Science and Engineering Full scholarship [1] Best Research Award of Creative Challenger Program, Korea	2023 2022 2022 2022 2021 2021 2018 2017 2014 2014
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PUBLICATIONS	<i>Peer Reviewed Journal</i> ‡ Equally contributed	
	[12] Lim. D.D. ; Ibarra. A.I.; Lee. J.; Jung. J.; Choi. W.; Gu. G. X*; " A tunable metamaterial microwave absorber inspired by chameleon's color-changing mechanism", (manuscript in preparation)	
	[11] Lim. D.D.‡ ; Lee. J.W.‡; Park. J.W.; Lee. J.M.; Noh. D.W.; Park. S.J.; Grace. X. Gu.*; Choi. W.*; "Multifunctional seamless meta-sandwich composite as lightweight, load-bearing, and broadband-electromagnetic-wave-absorbing structure", (under review)	
	[10] Lim. D.D. ; Lee. S.R.; Lee. J.H.; Choi. W.*; Grace. X. Gu.*; "Mechanical metamaterials as multifunctional broadband electromagnetic wave absorbers". Materials Horizons , 2024	
	[9] Lee. S, Sheikh HM, Lim, D. D. , Gu, G. X., & Marcus, P. S. (2024). Bayesian-Optimized Riblet Surface Design for Turbulent Drag Reduction via Design-by-Morphing with Large Eddy Simulation. Journal of Mechanical Design , 146(8), 081701.	

[8] Wei, Z., Zhang, Z., **Lim, D.**, Rey, J., Jones, M., & Gu, G. X. (2024). Influence of bioinspired riblet topographies on the mitigation of flow-induced noise in towed sonar arrays. **Extreme Mechanics Letters**, 102130.

[7] Song, C., Lee, J., **Lim, D. D.**, & Choi, W. (2023). Rationally Tunable Phase Change Material Thermal Properties Enabled by Three-Dimensionally Printed Structural Materials and Carbon-Based Functional Additives. **International Journal of Energy Research**, 2023.

[6] Lee, J.W.‡, **Lim, D. D.**‡, Park, J.W., Lee, J.M., Noh, D.W., Gu, G. X.*, Choi, W.* (2023); Multifunctionality of additively manufactured Kelvin foam for electromagnetic wave absorption and load bearing, **Small**, 2305005

[5] Jin, Z., **Lim, D. D.**, Zhao, X., Mamunuru, M., Roham, S., & Gu, G. X. (2023). Machine learning enabled optimization of showerhead design for semiconductor deposition process. **Journal of Intelligent Manufacturing**, 1-11.

[4] Lee, S., **Lim, D. D.**, Pegg, E., & Gu, G. X. (2022). The origin of high-velocity impact response and damage mechanisms for bioinspired composites. **Cell Reports Physical Science**, 3(12), 101152.

[3] **Lim, D. D.**‡; Park, J.W.‡; Lee, J.M.; Noh, D.W.; Choi, J.H.; Choi, W.*; "Broadband Mechanical Metamaterial Absorber", **Additive Manufacturing**, 2022, DOI: 10.1016/j.addma.2022.102856

[2] **Lim, D. D.**‡; Lee, J.M.‡; Park J.W.; Choi, W.*; "High-resolution and electrically conductive three-dimensional printing of carbon nanotube-based polymer composites enabled by solution intercalation", **Carbon**, 2022, DOI: 10.1016/j.carbon.2022.03.042

[1] Lee, S.J.‡; Lee, H.M.‡; **Lim, D. D.**; Song C.H.; Choi, W.*; "Temperature-responsive ultrasonic-wave engineering using thermoresponsive polymers", **Advanced Functional Materials**, 2021, 31, 2104042

Conference Proceedings

[2] **Lim, D.**, Georgiou, T., Bhardwaj, A., O'Connell, G. D., & Agogino, A. M. Customization of a 3D printed prosthetic finger using parametric modeling. **IDETC-CIE**, 2018 (Vol. 51753, p. V02AT03A034). American Society of Mechanical Engineers.

[1] Schoop, E., Nguyen, M., **Lim, D.**, Savage, V., Follmer, S., & Hartmann, B. Drill Sergeant: Supporting physical construction projects through an ecosystem of augmented tools. In Proceedings of the **2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems** (pp. 1607-1614).

Magazine

[1] "Sophie's Super Hand", Berkeley Engineer cover page, Fall 2015 - [Link](#)

Patents

[1] Park, J., Song, J., Jeon, E., Lee, K., Choi, J., **Lim, D.**, Lee, J., Choi, W. "Electrically Conductive Polymer Composites Manufacturing Method Thereof 3D Printing Method using The Polymer Composites" – KR/PT20210370

WORKSHOPS & PRESENTATION

[6] **Lim, D.**, et al. "Design of Showerheads Using Machine Learning for Optimizing Semiconductor Manufacturing Processes" **MRS Fall meeting, 2022**

[5] **Lim, D.**, et al. "Additive Manufacturing of Drag Reducing Synthetic Surfaces Inspired by Shark Denticles, **MRS Spring meeting, 2022**

[4] **Lim, D.**, et al. "Additive Manufacturing of Conductive Polymer Using Stereolithography—Effects of Multi-Walled Carbon Nanotubes Reinforcement on Electrical Properties and Dimensional Accuracy, **MRS Fall meeting, 2020**

[3] **Lim, D.**, et al. "3D printing of high resolution and electrically conductive composite using carbon nanotube", **KSME 2020**

[2] **Lim, D.**, et al. "Design and Fabrication Methodology for Customizable, Multi-material

Prosthetic Hands for Children” ASME International Design Engineering Technical Conference (IDETC) 2017

[1] Lim, D., et al. “Million Hands: Make It Yourself prosthetics” **ACMMM 2017 Maker’s program presentation**